sure, by microchemical technique, it seemed particularly desirable to use unicellular plants in one-celled cultures. Hence unicellular algae were employed in mass cultures in test-tubes, in one-celled cultures in Van Tiegham cells and on agar plates.

A series of quantitative measurements is being compiled and will be published later.

The tests reported in this paper were begun in September, 1935, and have been carried on continuously since that date in the botanical laboratories of the University of Wisconsin. Assistance has been received from the Wisconsin Alumni Research Foundation. I am indebted to Dr. W. P. Zimmerman for the growth-substances used and for helpful suggestions relative to their use with algae.

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TEMPERATURE AND THE GROWTH OF HAIR

CASUAL observation of the variation in the growth of facial hair at different seasons of the year suggested its measurement. An experiment was planned, involving the measurement of the hair shaved from the same part of the face at approximately the same hour and with the same technique every day for one year (the subject, P. E., a florid male, aet. 59).

The crop harvested with one stroke of a straight razor from an area of about one square inch on the right cheek immediately in front of the ear, was washed free from soap, dried and mounted. On each slide selected for measurement one hundred hairs chosen at random were measured with an ocular micrometer. From each month's samples ten were selected for measurement; usually, the first, second and third; the eleventh, twelfth and thirteenth; the twenty-first, twenty-second, twenty-third and twenty-fourth. Each daily value was linked with the average temperature of the preceding day, as furnished by the U. S. Weather Bureau.

Table I gives the average rate of growth and the mean temperature.

TABLE I

Month	Mean temperature	Measured growth
January	58°	.305 mm.
February	54°	.386 "
March	61°	.404 "
April	70°	.458 "
May	74°	.464 "
June	81°	.516 "
July	83°	.533 "
August	82°	.538 "
September	79°	.545 "
October	73°	.533 "
November	64°	.495 "
December	60°	.375 "

A "scatter diagram" constructed from the individual daily measurements shows a very interesting break in the regression line at about 65° Fahrenheit, a temperature which ordinarily calls for heating of homes and office buildings.

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VITAMIN B_1 CRAVING IN RATS[1]

WELL-AUTHENTICATED instances of excessive appetite or craving for special food stuffs are not numerous. We do know that some animals show a marked craving for common salt; other animals show an increased craving for phosphorus, expressed in a desire to eat bones; and some animals, including humans, may have a special appetite for calcium as shown by their ingestion of plaster and chalk. These cravings apparently have their origin in deficiencies produced either by a decreased intake of these minerals, or by an altered mineral metabolism in the case of sodium and calcium craving, dependent on changes in the adrenal[2] and parathyroid[3] glands, respectively.

Another and possibly more powerful craving may now be added to this list: the craving for vitamin B_1. In earlier experiments it was found that normal as well as vitamin B deficient rats show a great appetite for dried baker's yeast, which contains large quantities of vitamin B in addition to many other substances.[4] By virtue of the voluntarily increased ingestion of yeast the animal quickly lost all symptoms of vitamin B deficiency. This is in agreement with observations made by Harris, Clay, Hargreaves and Ward.[5] However, contrary to the results of Harris, *et al.*, we have found that rats show an overwhelming appetite for vitamin B in pure crystalline form, either as B_1 (betaxin or betalin), or Riboflavin. Vitamin B_1 was given in the form of an aqueous solution of synthetic thiamine chloride (betaxin, Winthrop Chemical Company, and betalin, Eli Lilly Company) in graduated inverted bottles. One vitamin deficient rat drank 11 cc, or 5,500 international units, in less than half an hour; another rat drank 29 cc, or 14,500 international units, in 24 hours. The odor of the vitamin as well as its taste arouses great interest. This is shown by the fact that the rats found the bottles at once, even when as many as twelve other containers filled with different foods or solutions were present in the cage at the same

[1] From the Psychobiological Laboratory, Henry Phipps Psychiatric Clinic and the Harriet Lane Home for Children, Johns Hopkins Hospital.

[2] C. P. Richter, *Endocrinology*, 20: 657–666, 1936.

[3] C. P. Richter and J. F. Eckert, *Endocrinology*, 21: 50–54, 1937.

[4] C. P. Richter, L. E. Holt, Jr., and B. Barelare, Jr., *Proc. Amer. Physiol. Soc.*, April, 1937, pp. 132–133.

[5] L. R. Harris, Janet Clay, Florence J. Hargreaves and A. Ward, *Proc. Roy, Soc. London*, Series B, 113: 161–190, 1933.